"METHUSELAH" WILLOW OAK
("Methuselah" *Quercus phellos*)
NPS Witness Tree Protection Program
George Washington Memorial Parkway
East of northbound lanes
Near Belle Haven Marina parking lot
Alexandria
Virginia

HALS VA-15
VA-15

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

HISTORIC AMERICAN LANDSCAPES SURVEY
National Park Service
U.S. Department of the Interior
1849 C Street NW
Washington, DC 20240-0001

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HALS No. VA-15

Location:	George Washington Memorial Parkway, east of northbound lanes, near Belle Haven Marina parking lot, Alexandria, Virginia
Owner/Manager:	U.S. Government, National Park Service
Present Use:	Ornamental and shade tree; prominent landscape element
Significance:	The "Methuselah" Willow Oak (*Quercus phellos*) is significant because of its longevity and exceptional size. It is also significant because of the respect its stature apparently commanded during the construction of the George Washington Memorial Parkway, as the road alignment appears to have been altered in order to preserve the massive tree.
Author & Discipline:	Jonathan Pliska, Landscape Architectural Historian, 2006
Project Information:	The Witness Tree Protection Program was a pilot project undertaken by the Historic American Landscapes Survey and the National Capital Region of the National Park Service. The principals involved were Richard O'Connor, Chief, Heritage Documentation Programs; Paul D. Dolinsky, Chief, Historic American Landscapes Survey; Darwina Neal, Chief, Cultural Resources, National Capital Region; Jonathan Pliska, Historian, Historic American Landscapes Survey; Jet Lowe and James Rosenthal, Photographers, Heritage Documentation Programs.

PART I. HISTORICAL INFORMATION

Built by the U.S. Bureau of Public Roads (BPR) from 1929-32, Mount Vernon Memorial Highway (MVMH) extends 15.2 miles from Arlington Memorial Bridge south to the gates of George Washington's Mount Vernon estate, and comprises the southernmost component of the 38.3-mile long George Washington Memorial Parkway (GWMP). In authorizing construction of MVMH, Congress tasked the BPR with not only designing a functional roadway that would accommodate increasing amounts of commuter and tourist traffic, but also to preserve the natural scenery of the Potomac shoreline and provide recreational opportunities for visitors. In order to meet these requirements, the BPR

constructed the highway as, in the words of National Park Service historian Tim Davis, "the first comprehensively designed modern roadway built by the federal government."[1] The NPS asserts that the project was revolutionary, in that it

> *helped popularize such features as limited-access construction with widely spaced exits and entrances; overpasses to eliminate danger and congestion at major interchanges; broad, tree-lined right-of-ways to enhance safety and beauty; and careful integration of the roadway with the surrounding terrain to highlight attractive views and make driving safer, easier, and more appealing.*[2]

Conversely, present-day motorists pass through the same lands that George Washington traveled by horse in the eighteenth century, and the new development was consciously designed to retain this link with the past. [3] NPS literature proudly reports that when MVMH opened in January 1932, "Highway engineers, planners, and the popular press celebrated the parkway as the ultimate blend of modern engineering, landscape architecture, historic preservation, and patriotic sentiment."[4]

The development of the highway's naturalistic landscape treatment constituted the final phase of construction. According to Davis:

> *The BPR's engineers and landscape architects were extremely successful in their efforts to create the impression that the attractive landscape of the memorial highway was a happy accident of nature that long predicated the parkway development, and that the new highway followed a fortuitous course through the rolling terrain, requiring no cuts or fills and not destroying so much as a single tree.*[5]

In reality, crews carefully cleared bushy undergrowth, removed dead and unhealthy trees, selectively opened vistas over the Potomac, and planted over 250,000 native trees, shrubs, and ground cover plants, the majority of which were salvaged from the highway's path or collected from adjacent private lands. While BPR crews carried out the majority of the transplanting, moving extremely large trees was considered specialized work and most often contracted out to professionals.[6] Although several hundred large trees were transplanted, the inherent difficulty and high cost coupled with the need to harmonize the highway with the existing landscape led BPR officials to take the unusual step of winding

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[1] Timothy Davis, "George Washington Memorial Parkway" (Washington, D.C.: Historic American Engineering Record (HAER) No. VA-69, National Park Service, 1993-94), 2.
[2] National Park Service, "George Washington Memorial Parkway," in *Highways in Harmony*, http://www.cr.nps.gov/history/online_books/hih/index.htm (accessed January 17, 2007).
[3] National Park Service, *George Washington Memorial Parkway* (Washington, D.C.: U.S. Dept. of the Interior, National Park Service, 15 November 2007), http://www.nps.gov/gwmp (accessed 14 December 2007).
[4] Ibid.
[5] Davis, 127.
[6] Ibid., 128-29; National Park Service, *George Washington Memorial Parkway*.

the parkway around prominent pre-existing trees.[7] One such specimen is the immense willow oak (*Quercus phellos*), which current National Park Service staff affectionately refer to as "Methuselah." Located near the Belle Haven Marina, Mount Vernon Memorial Highway comes within a few feet of the tree, before gradually arching west. Visible in the earliest aerial photographs of Mount Vernon Memorial Highway, Methuselah was already a large, well-established tree when construction began, and was clearly integrated into the overall landscape plan.

PART II. BIOLOGICAL INFORMATION

Quercus phellos, commonly known as willow oak,[8] is native to North America with a geographic range from New York to Florida and west to Missouri, Oklahoma and Texas.[9] The genus name, *Quercus*, is Latin for oak and the species name, *phellos*, is the ancient Greek word for cork. It is one of approximately 450 deciduous tree species classified under the genus *Quercus* within the oak family Fagaceae.[10] The species' bark and leaves most easily identify willow oak specimens. When very young, the bark is light red in color, but darkens to gray with age and becomes roughened by irregular furrows and ridges.[11] Unlike most oaks, the leaves are shaped like willow leaves and are described by the U.S. Dept. of Agriculture as "simple, alternate, deciduous, elongated and slender, with smooth edges; they are light green and shiny above, dull and paler below with distinct [pinnate] venation."[12] In autumn they turn yellow, bronze-orange, yellow-brown, and russet-red before falling in the winter.[13] Flowers take the form of catkins, compact and often droopy forms quite different from the open petal types produced by many other species. Because they require airflow for wind pollination, the catkins bloom from February to May, approximately one week before the leaf buds appear. The species is monoecious; both male and female catkins appear on each willow oak tree. Staminate (male) flowers encased in slender, yellow-green, and hairy catkins, while pistillate (female) flowers are tiny and grow in clusters at stem junctions.[14] As with all oaks,

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[7] Davis, 91.

[8] This species is also known as peach oak, pin oak, and swamp chestnut oak. See Bryce E. Schlaegel, "Willow Oak," in *Silvics of North America: 2. Hardwoods. Agricultural Handbook 654*, online ed., tech. coords. Russell M. Burns and Barbara H. Honkala (Washington, D.C.: U.S. Dept. of Agriculture, U.S. Forest Service, 1990), 1378, http://www.na.fs.fed.us/spfo/pubs/silvics_manual/volume_2/silvics_v2.pdf (accessed 12 June 2006).

[9] Michael A. Dirr, *Manual of Woody Landscape Plants: Their Identification, Ornamental Characteristics, Culture, Propagation and Uses*, 5th ed. (Champaign, Ill.: Stipes Publishing L.L.C., 1998), 831.

[10] Liberty Hyde Bailey and Ethyl Hyde Bailey, "*Quercus*," in *Hortus Third: A Concise Dictionary of Plants Cultivated in the United States and Canada*, revised and expanded by the staff of the Liberty Hyde Bailey Hortorium, Cornell University (New York: Macmillan Publishing Co., Inc., 1976), 933.

[11] Dirr, 830.

[12] U.S. Dept. of Agriculture, Natural Resources Conservation Service, Plant Materials Program, "Plant Fact Sheet: Pin Oak, *Quercus phellos*," in *PLANTS Database* (Washington, D.C.: U.S. Dept. of Agriculture, Natural Resources Conservation Service, National Plant Data Center, 5 February 2002), http://plants.nrcs.usda.gov/factsheet/pdf/fs_pode3.pdf (accessed 23 June 2006).

[13] Dirr, 831.

[14] Schlaegel, 1381; Liberty Hyde Bailey and Ethyl Hyde Bailey, "Monoecious," in *Hortus Third: A Concise Dictionary of Plants Cultivated in the United States and Canada*, revised and expanded by the staff of the

Quercus phellos produces acorns. These seeds, measuring ½" or less long and wide, can be differentiated from those of other species' by their alternating brown and blackish bands.[15]

As it was naturally established prior to the construction of the George Washington Memorial Parkway, the precise age of Methuselah is unknown. However, this giant tree is clearly visible from the earliest aerial photographs of the parkway taken during the 1930s, and was already large by then. Given that *Quercus phellos* demonstrates a medium growth rate, averaging between 1' and 2' per year, and the tree's substantial size in the 1930s, it is reasonable to conclude that Methuselah began growing sometime around the turn of the twentieth century, if not prior.[16] The specimen is therefore at minimum approximately 100 years old. Although alive for a century or more, Methuselah's name is somewhat deceptive since the tree is not extremely old for its species, which has a typical lifespan of at least 150 years.[17] However, since willow oaks begin producing seeds at approximately twenty years of age, it is physiologically mature.[18] These mature trees normally range in size from 40' to 60' tall, with a 30' to 40' crown spread, and 110" to 228" trunk circumference.[19] Although it has not been professionally measured, Methuselah's dimensions appear to be greater than all three of these averages.

Quercus phellos is an extremely vigorous species that exhibits no serious susceptibility to pests or diseases and is suited to a variety of environmental conditions. The trees accept clay, sand, and loam soils that are inundated by frequent floods or generally well-drained. They are highly drought tolerant, but grow best in mildly acidic soil that remains moist even when precipitation is scarce. Willow oaks also adjust well to an urban environment since they are largely unaffected by elevated ozone levels or the presence of aerosol salts frequently used to melt ice and aid drivers in the winter months. Roads and foundations do not significantly impact their root systems, and consequently *Quercus phellos* is an excellent candidate for plantings along city streets and in small lawns, parking lot islands, or highway medians.[20] Given these factors, Methuselah is extremely well suited to its location. Rooted in the sandy loam common along the Potomac River, its low topographic position allows it to intercept moisture moving down slope through the soil or as groundwater. Although it is only a few feet back from the George Washington

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Liberty Hyde Bailey Hortorium, Cornell University (New York: Macmillan Publishing Co., Inc., 1976), 1218.

[15] Dirr, 831.

[16] Dirr, 830.

[17] Jeffery L. Reimer and Walter Mark, *SelecTree: A Tree Selection Guide* (San Luis Obispo, Calif.: Urban Forest Ecosystems Institute, 2004), California Polytechnic State University, http://selectree.calpoly.edu (accessed 21 June 2006).

[18] Schlaegel, 1381.

[19] Dirr 830;U .S. Dept. of Agriculture, Natural Resources Conservation Service, Plant Materials Program

[20] Edward F. Gilman and Dennis G. Watson, Quercus phellos: *Willow Oak*, (Gainsville, Fla.: University of Florida, Institute of Food and Agricultural Sciences, November 1993), http://edis.ifas.ufl.edu/ST592 (accessed 12 June 2006).

Memorial Parkway, it is nevertheless largely unaffected by both the thoroughfare and its high traffic levels. However, a well-healed but prominent scar is present near the base of the trunk, likely the result of an automobile accident. Today, Methuselah appears in excellent overall health, without any obvious signs of weakness, deterioration, or structural unsoundness. While the tree will likely never reach the near millennia long lifespan that its biblical namesake purportedly reached, barring a natural disaster or radical change to the surrounding landscape, this tree has the potential to live long enough to truly live up to its title.